

IN THE CLAIMS

Please amend the following claims which are pending in the present application:

1. (Original) A medical device for insertion into a bodily vessel to treat an intracranial aneurysm, the device comprising:

a mechanically expandable device expandable from a first position to a second position, said mechanically expandable device is expanded radially outwardly to the second position such that the exterior surface of said mechanically expandable device engages with the inner surface of the vessel so as to maintain a fluid pathway through said vessel; and

a membrane expandable from a first position to a second position in response to expansion of said mechanically expandable device, said membrane being positioned proximal to the aneurysm and obstructing blood circulation to the aneurysm when expanded to the second position, and at least a portion of the membrane is secured to the mechanically expandable device to maintain the position of the membrane relative to the mechanically expandable device when expanded to the second position;

wherein the membrane is permeable and porous, the size of the pores of the membrane and the ratio of the material surface area of the membrane being such

that blood supply to perforators and/or microscopic branches of main brain arteries is permitted to improve healing of the bodily vessel but blood supply to the aneurysm is prevented.

2. (Original) The device of claim 1, wherein the distance between adjacent pores is from about 40 to 100 microns.
3. (Original) The device of claim 1, wherein the membrane is made of a biocompatible and elastomeric polymer.
4. (Original) The device of claim 1, wherein the membrane has a thickness of about 0.0005 to 0.005".
5. (Original) The device of claim 1, wherein the ratio of the material surface area of the membrane is from about 25 to 75%.
6. (Original) The device of claim 1, wherein the membrane has pores between 20 to 100 microns in size.

7. (Original) The device of claim 1, wherein the membrane is made from polymeric material or biodegradable material.

8. (Original) The device of claim 7, wherein the biodegradable material forms multiple sub-layers mixed with drugs or reagents.

9. (Original) The device of claim 1, wherein the membrane is capable of isotropic expansion.

10. (Original) The device of claim 1, wherein the membrane is disposed on the exterior surface of the device.

11. (Original) The device of claim 1, wherein the membrane completely surrounds the device.

12. (Original) The device of claim 1, wherein the membrane circumferentially surrounds a portion of the device.

13. (Original) The device of claim 1, wherein the membrane covers a portion of the device.

14. (Original) The device of claim 1, wherein the membrane is non-porous and non-permeable to prevent blood circulation to the aneurysm.

15. (Original) The device of claim 14, wherein the membrane is made from a solid polymer.

16. (Original) The device of claim 1, wherein the membrane has fabricated pores between 20 to 100 microns in size.

17. (Original) The device of claim 16, wherein the pores are fabricated by laser drilling.

18. (Currently amended) The device of claim 16 or 17, wherein the distance between the pores is less than 100 $\mu$ m.

19. (Original) The device of claim 1, wherein the membrane comprises a plurality of polymeric strips secured to the mechanically expandable device

20. (Original) The device of claim 19, wherein the strips are less than 0.075mm and the distance between adjacent strips is less than 100 $\mu$ m.

21. (Original) The device of claim 1, wherein the membrane comprises a mesh secured to the mechanically expandable device.

22. (Original) The device of claim 21, wherein spaces of the mesh is less than 100 $\mu$ m and the width of the meshing is between 0.025 to 0.050mm.

23. (Original) The device of claim 1, wherein the aneurysm is any one from the group consisting of: a regular size, giant or wide neck aneurysm having an aneurysm neck greater than 4 millimeters or a dome to neck ratio greater than 2, berry aneurysm, CC fistula and fusiform aneurysm.

24. (Original) The device of claim 1, wherein the mechanically expandable device comprises a generally tubular structure having an exterior surface defined by a plurality of interconnected struts having interstitial spaces therebetween.

25. (Original) The device of claim 1, wherein the mechanically expandable device is self-expandable or balloon expandable.

26. (Original) The device of claim 1, wherein the mechanically expandable device is a stent.

27. (Original) The device of claim 24, wherein the membrane is supported by the generally tubular structure and is attached to at least one strut.

28. (Original) The device of claim 26, wherein the membrane is tubular having a diameter similar to a nominal initial diameter of the stent; and wherein the membrane is disposed onto the outer surface of the stent or introduced by dip coating or spraying between the struts of the stent.

29. (Original) The device of claim 26, wherein the membrane is a segment of a tubular structure disposed onto a portion of the outer surface of the stent.

30. (Original) The device of claim 8, wherein the at least one reagent is in any one form selected from the group consisting of: solid tablet, liquid and powder.

31. (Original) The device of claim 1, wherein at least one radiopaque marker is provided on the mechanically expandable device to improve visibility of the device during and after insertion.

32. (Original) The device of claim 31, wherein the at least one radiopaque marker is made from gold or platinum.

33. (Original) The device of claim 31, wherein center radiopaque markers and end radiopaque markers are provided on the mechanically expandable device.

34. (Original) A medical device for treating a bifurcation or trifurcation intracranial aneurysm between at least two bodily vessels, the device comprising:

- a first mechanically expandable device for inserting into a first vessel;
- a second mechanically expandable device for inserting into a second vessel;
- each mechanically expandable device expandable from a first position to a second position, said mechanically expandable device is expanded radially outwardly to the second position such that the exterior surface of said mechanically expandable device engages with the inner surface of the vessel so as to maintain a fluid pathway through said vessel; and

a membrane expandable from a first position to a second position in response to expansion of said mechanically expandable devices, said membrane being positioned proximal to the aneurysm and obstructing blood circulation to the aneurysm when expanded to the second position, and at least a portion of the membrane is secured to each mechanically expandable device to maintain the position of the membrane relative to the mechanically expandable devices when expanded to the second position;

wherein the membrane is permeable and porous, the size of the pores of the membrane and the ratio of the material surface area of the membrane being such that blood supply to perforators and/or microscopic branches of main brain arteries is permitted to improve healing of the bodily vessel but blood supply to the aneurysm is prevented.

35. (Original) A method of making a medical device according to claim 1, the method comprising:

disposing the generally tubular structure on a mandrel; and  
disposing the membrane onto the outer surface of the mechanically expandable device.

36. (Original) A method of making a medical device according to claim 24,

the method comprising:

disposing the generally tubular structure on a mandrel; and

incorporating the membrane between the struts of the stent.

37. (Currently amended) The method of claim 35 or 36, wherein the disposing

is any one selected from the group consisting of: spraying, suture, lamination,

adhesion, heat and dip coating.

38. (Original) The device of claim 26, wherein the stent is delivered to the

aneurysm by a delivery catheter.